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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,681	11/20/2001	Ukyo Mori	DP-827 US	9011

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EXAMINER	
DEAN, RAYMOND S	
ART UNIT	**PAPER NUMBER**
2684	

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/988,681	MORI, UKYO	
	Examiner	Art Unit	
	Raymond S Dean	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1104*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed November 5, 2004 have been fully considered but they are not persuasive.

Examiner respectfully disagrees with Applicants' assertion on page 11, ARGUMENT section of the Remarks "None of the references shows or suggest an electronic device as claimed. That is, ...". Hayes teaches an electronic device in which a transparent plate member extends over a display, and a driving unit, positioned other than over the display (See Page 2 lines 24 – 28, Page 2 lines 35 – 36, Page 3 line 1). The arrangement of the transducers so that the field of view is not obscured comprises positioning said transducers other than over the display.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 – 6, 11, 13, 15 – 16, 19, and 22 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayes et al. (GB 2330980) in view of Azima et al. (US 6,332,029).

Regarding Claim 1, Hayes teaches an electronic device comprising: a main body (Page 2 lines 21 – 22); a display disposed on the main body for displaying information (Page 2 line 23); a transparent plate member provided on the main body, extending over the surface of the display (Page 2 lines 24 – 28) and a driving unit positioned other than over the display (Column 2 lines 35 – 36, Column 3 line 1).

Hayes does not teach a driving unit for vibrating the plate member in response to an audio signal.

Azima teaches a driving unit for vibrating the plate member in response to an audio signal (Figure 1, Figure 9, Column 23 lines 33 – 36, Column 23 lines 46 - 50).

Hayes and Azima both teach a loudspeaker panel thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transducer taught above in Azima in the loudspeaker panel of Hayes for the purpose of creating an effective and compact loudspeaker panel with the capability for wide-band performance of great clarity or intelligibility as taught by Azima.

Regarding Claim 2, Hayes teaches an electronic device comprising: a main body having a microphone near a first end of the front surface thereof (Figures 3, 4, 6, Page 3 lines 2 - 3); a display disposed near a second end of the front surface, opposite to the first end for displaying information (Figures 3, 4, 6, Page 3 lines 4 - 10); a transparent plate member provided on the main body, extending over the surface of the display (Page 2 lines 24 – 28); and a driving unit positioned other than over the display (Column 2 lines 35 – 36, Column 3 line 1).

Hayes does not teach a driving unit for vibrating the plate member in response to an audio signal.

Azima teaches a driving unit for vibrating the plate member in response to an audio signal (Figure 1, Figure 9, Column 23 lines 33 – 36, Column 23 lines 46 - 50).

Hayes and Azima both teach a loudspeaker panel thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transducer taught above in Azima in the loudspeaker panel of Hayes for the purpose of creating an effective and compact loudspeaker panel with the capability for wide-band performance of great clarity or intelligibility as taught by Azima.

Regarding Claim 3, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 1. Azima further teaches wherein the driving unit comprises a magnet installed adjacent an edge of the transparent plate member (Figure 9, Column 30 lines 16 – 23), and a voice coil (Column 23 lines 54 – 57).

Regarding Claim 4, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 2. Azima further teaches wherein the driving unit comprises a magnet installed adjacent an edge of the transparent plate member (Figure 9, Column 30 lines 16 – 23), and a voice coil (Column 23 lines 54 – 57).

Regarding Claims 5, Hayes in view of Azima teaches all of the claimed limitations recited in Claims 1. Azima further teaches a plurality of driving units installed at plural places adjacent edges of the transparent plate member (Column 14 lines 6 – 15, the 24 possible transducer sites from each corner comprises sites adjacent to edges of the loudspeaker panel).

Regarding Claim 6, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 2. Azima further teaches a plurality of driving units installed at plural places adjacent edges of the transparent plate member (Column 14 lines 6 – 15, the 24 possible transducer sites from each corner comprises sites adjacent to edges of the loudspeaker panel).

Regarding Claims 11, 13, Hayes in view of Azima teaches all of the claimed limitations recited in Claims 1, 2. Azima further teaches wherein the driving unit comprises a voice coil installed adjacent an edge of the transparent plate member (Column 14 lines 6 – 11, Column 23 lines 54 – 57, the transducer comprises the voice coil thus the site of the transducer will be the site of the voice coil, the 24 possible transducer sites from each corner comprises sites adjacent to edges of the loudspeaker panel) and a magnet (Figure 9, Column 30 lines 16 – 23).

Regarding Claim 15, Hayes teaches an electronic device comprising: a main body (Page 2 lines 21 – 22); a display disposed on the main body for displaying information (Page 2 line 23); a plate member having a transparent central section overlying the display (Page 2 lines 24 – 28) and a driving unit connected to a section of the plate member (Column 2 lines 35 – 36, Column 3 line 1).

Hayes does not teach a colored section adjacent the transparent central section and positioned other than overlying the display and a driving unit for vibrating the plate member in response to an audio signal.

Azima teaches a colored section adjacent the transparent central section and positioned other than overlying the display (Figure 1, Column 23 lines 28 – 33, the outer

frame (1) of the loudspeaker panel will have color) and a driving unit for vibrating the plate member in response to an audio signal (Figure 1, Figure 9, Column 23 lines 33 – 36, Column 23 lines 46 - 50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the outer frame and transducer taught by Azima in the loudspeaker panel of Hayes for the purposes of providing resilient suspension to the loudspeaker panel and creating an effective and compact loudspeaker panel with the capability for wide-band performance of great clarity or intelligibility as taught by Azima.

Regarding Claim 16, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 15. Azima further teaches wherein the driving unit comprises a magnet installed on the colored section of the plate member (Figure 9, Column 30 lines 16 – 23), and a voice coil (Column 23 lines 54 – 57).

Regarding Claim 19, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 15. Azima further teaches wherein the driving unit comprises a voice coil installed on the colored section of the plate member (Column 14 lines 6 – 11, Column 23 lines 54 – 57, the transducer comprises the voice coil thus the site of the transducer will be the site of the voice coil, the 24 possible transducer sites from each corner comprises sites on the outer frame of the loudspeaker panel) and a magnet (Figure 9, Column 30 lines 16 – 23).

Regarding Claim 22, Hayes in view of Azima teaches all of the claimed limitations recited in Claims 15. Azima further teaches a plurality of driving units installed at plural places on the colored section of the plate member (Column 14 lines 6

– 15, the 24 possible transducer sites from each corner comprises sites on the outer frame of the loudspeaker panel).

Regarding Claim 23, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 15. Azima further teaches wherein the colored section comprises an edge section circumscribing the transparent central section (Figure 1, Column 23 lines 28 – 33, the outer frame, which is the colored section, surrounds the loudspeaker panel).

4. Claims 7 – 10, 12, 14, 17 – 18, and 20 – 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayes et al. (GB 2330980) in view of Azima et al. (US 6,332,029) as applied to Claims 3, 4, 11, 13 above, an further in view of Porrazzo et al. (5,872,855).

Regarding Claims 7, 12, 14, Hayes in view of Azima teaches all of the claimed limitations recited in Claims 3, 11, 13. Azima further teaches the magnets are disposed at places inside and outside of the frame of the voice coil (Figure 11a, Column 31 lines 43 – 47, the magnetic system comprises the poles, Figure 11a shows said poles on the inside and outside of the coils (13)).

Hayes in view of Azima does not teach wherein the voice coil is a planar coil having a shape of a square frame.

Porrazzo teaches wherein the voice coil is a planar coil having a shape of a square frame (Column 6 lines 7 – 11, the voice coil is a planar coil, which means that said coil will be in a two dimensional plane, squares, rectangles, and quadrilaterals have

two dimensional planes thus said planar coil can be square, rectangular, or quadrilateral shaped).

Hayes in view of Azima and Porrazzo teach the use of voice coils for the production of sound thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use planar coils taught above by Porrazzo for the purpose of producing sound in a plurality of frequency ranges as taught by Porrazzo.

Regarding Claims 8, 17, 20, Hayes in view of Azima teaches all of the claimed limitations recited in Claims 4, 16, 19. Azima further teaches the magnets are disposed inside and outside of the frame of the voice coil (Figure 11a, Column 31 lines 43 – 47, the magnetic system comprises the poles, Figure 11a shows said poles on the inside and outside of the coils (13)).

Hayes in view of Azima does not teach wherein the voice coil is a planar coil having a shape of a quadrilateral frame.

Porrazzo teaches wherein the voice coil is a planar coil having a shape of a quadrilateral frame (Column 6 lines 7 – 11, the voice coil is a planar coil, which means that said coil will be in a two dimensional plane, squares, rectangles, and quadrilaterals have two dimensional planes thus said planar coil can be square, rectangular, or quadrilateral shaped).

Hayes in view of Azima and Porrazzo teach the use of voice coils for the production of sound thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use planar coils taught above by Porrazzo for the purpose of producing sound in a plurality of frequency ranges as taught by Porrazzo.

Regarding Claims 9, 18, 21, Hayes in view of Azima teaches all of the claimed limitations recited in Claims 3, 16, 19. Hayes in view Azima does not teach a second planar voice coil adjacent the first voice coil in a direction orthogonal to a surface on which the first voice coil is installed.

Porrazzo further teaches a second planar voice coil adjacent the first voice coil in a direction orthogonal to a surface on which the first voice coil is installed (Figure 2A, Figure 3C, Column 5 lines 31 – 36, the coils are layered in a direction that is orthogonal to the plane of the sound driver surface (106)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the voice coil arrangement taught by Porrazzo in loudspeaker panel of Hayes in view of Azima for the purpose of adding versatility to the performance of said loudspeaker panel as taught by Porrazzo.

Regarding Claim 10, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 4. Hayes in view Azima does not teach a second planar voice coil adjacent the first voice coil in a direction orthogonal to a surface on which the first voice coil is installed.

Porrazzo further teaches a second planar voice coil adjacent the first voice coil in a direction orthogonal to a surface on which the first voice coil is installed (Figure 2A, Figure 3C, Column 5 lines 31 – 36, the coils are layered in a direction that is orthogonal to the plane of the sound driver surface (106)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the voice coil arrangement taught by Porrazzo in

loudspeaker panel of Hayes in view of Azima for the purpose of adding versatility to the performance of said loudspeaker panel as taught by Porrazzo.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 703-305-8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond S. Dean
March 10, 2005

NICK CORSARO
PRIMARY EXAMINER